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January 24, 2005

VIA FACSIMILE, U.S. MAIL AND HAND DELIVERY

Charles Terreni
Chief Clerk of the Commission
SC Public Service Commission
P.O. Drawer 11649
Columbia, SC 29211

RE: Bush River Utilities, Inc., Docket No. 2004-259-S
~~Development Services, Inc., Docket No. 2004-212-S~~

Dear Mr. Terreni:

At the hearing with regard to the Bush River Utilities, Inc. rate application, the Commission requested certain late-filed exhibits which are enclosed as follows:

Exhibit 4 Property Tax Calculations

Keith Parnell, President of Bush River Utilities has advised us that the calculation is as follows:

Property tax is calculated at 10.5% of appraised value on new plant of plus or minus 1.5 million dollars. Three hundred mills are applied as the millage factor. 150,000 x 3 = $4500 just on the improvements. The property tax shown in the filing exhibit is added to the $4,500.

Exhibit 5 Net Book Value of Lagoon

This is to advise that the lagoon is fully depreciated.

Exhibit 6 Plant and Equipment Depreciation Schedules

1. The Design of Municipal Wastewater Treatment Plants, Volume I, pages 24, 69, 137, 141
2. Correspondence from Interstate Utility Sales, Inc. to Ken Parnell dated January 19, 2005, pages 1 and 2
3. Correspondence from Combs & Associates, Inc. to HPG, Consulting Engineers dated January 19, 2005, page 1.

Exhibit 14 NARUC Guidelines, Public Utility Depreciation Practices

1. Online advertisement for the Public Utility Depreciation Practices (August 1996)

Please accept this correspondence as the late-filed exhibits requested at the hearing. If you or the ORS staff have questions, or I can be of further assistance, please feel free to contact me.

Sincerely,

Elliott & Elliott, P.A.

Scott Elliott

Scott Elliott

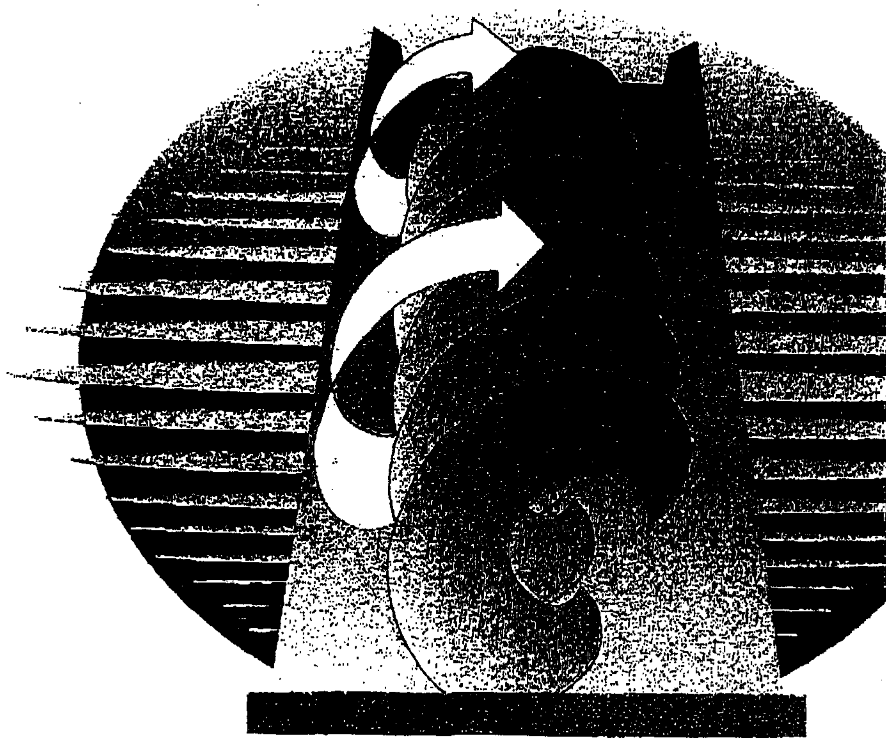
SE/amb
Encl.

cc: Florence Belser, Esquire
Benjamin P. Mustian, Esquire
David Butler, Esquire

EXHIBIT 6

Design of Municipal Wastewater Treatment Plants

Volume I



WEF Manual of Practice No. 8
ASCE Manual and Report on Engineering Practice No. 76

PROCUREMENT

CONTRACTUAL APPROACHES. Design- and construction-related activities described in Table 2.1 represent what may be termed the classical architect/engineer approach. With this approach, vendor-furnished equipment is procured according to performance or prescriptive equipment specifications through contractors who are bidding from plans and specifications prepared by a consulting engineer.

All funding and ownership of facilities rest with the owner in the classical architect/engineer approach. The owner may also elect to procure program administrative, design, and construction management services in complicated projects.

Alternate contractual approaches may incorporate turnkey or a combination of turnkey and architect/engineer procurement of desired facilities. The term "turnkey" applies if a single entity assumes total responsibility for plant design, construction, start-up, and sometimes financing. The approaches and their relative merits are presented in Table 2.4.[4] All involve the activities of a design team in some capacity.

In a turnkey approach, the owner cannot escape the risks associated with changing regulations and wastewater variability. Legal counsel should be sought early and used throughout the preparation of turnkey contracts. Conflict in turnkey projects results most often from the owner's failure to define clearly the expectations in terms of performance and quality of goods and services.

Privatization, the involvement of nonpublic and entrepreneurial interests in project development and system operation, provides another option for procurement of project needs. In the most comprehensive of three general alternative approaches to privatization, the private enterprise provides all required engineering, construction, funding, and operational services. These are covered by contractual arrangements between the municipal owner and the developer as to specific responsibilities and remuneration. This approach would critically depend on existence of favorable federal tax incentives for the developer. Such incentives do not presently exist. As another option, a municipality could design, build, and sell the facility or enter into a sale or leaseback agreement with a private corporation. As the third approach involves more limited private sector participation, private sector operating services may be obtained for a facility designed and built by the municipality or municipal agency.

SPECIFICATIONS. Two general types of specifications are used to procure goods and services for construction of a municipal project under any procurement option: the prescriptive and the performance specification.

mation also suggests that even the perfect design will not perform adequately without informed operation and responsible administration and, most importantly, reliable solids disposal based on the daily needs of the plant.

FACILITY DESIGN REQUIREMENTS

A design may be functionally correct but fall short of expectations if it fails to account for start-up conditions, potential future expansion of the plant, the convenience and safety of the plant employees, and the plant's impacts on its surroundings.

PRESENT AND FUTURE DESIGN REQUIREMENTS. Reasonably accommodating the needs during the initial years of plant operation must be properly balanced with those of the future. In most cases, completely accommodating the objectives of any part of this time span will compromise those of another part. Experience has proved that the design should primarily accommodate the design year projected conditions, with allowances for (1) proper operation when loading conditions may be significantly less than design year loadings and (2) expansion or rehabilitation to handle loadings reasonably anticipated beyond the design year. Achieving the proper balance between the design period and the future sometimes creates a dilemma. In many cases, disregard for the future beyond the design year has resulted in abandonment of the original facility at great cost to the community. In other cases, an overly intensive design focus on an uncertain future beyond the design period has resulted in facilities with operations, maintenance, or performance shortcomings during the design period.

Because the reliability of loading projections declines as the time span of the projection increases, a facility process or layout commitment to an uncertain distant future deserves careful scrutiny if it would significantly compromise system operation during the first 15 to 20 years after start-up. As another consideration that reduces the reliability of commitments to the future, future changes in regulatory requirements or treatment technologies could invalidate assumptions underlying the future commitment. Nonetheless, the design of any treatment works should consider the likelihood that most plants will eventually be rehabilitated, upgraded, or expanded, regardless of the design period or the anticipated service lives of plant facilities. Recognition and reasonable accommodation of inevitable change and replacement is a key responsibility of the owner and the design engineer. With prudence and foresight, future plant modifications can be made easily and economically. Table 3.3[3] summarizes considerations involved in planning for the future beyond the design period. Chapters 4, 5, 7, and 8 provide additional relevant information.

The operation of facilities is the main consumer of energy at treatment plants. Because energy consumption of different unit processes and operations varies greatly and because there are innumerable combinations possible, data must be available for each prospective treatment operation or process considered.

The main energy sources are (1) electric power, (2) either natural gas or propane, and (3) diesel fuel or gasoline. Electric power is used mainly for running the electric motors for the process equipment and for providing lighting and power for various ancillary support systems. Natural gas or propane is used for building and digester heating and is used as a fuel source for standby engine-generators. Diesel fuel or gasoline is used similarly for standby engine-generators and for vehicle fuel. Particular attention needs to be paid to the electrical energy costs because of the complex pricing structure used by utilities.

Electrical energy charges are commonly assessed based upon energy use, power factor charges, and demand charges. Power factor charges are concerns for plants having large electric-motor driven equipment. The demand charges are assessed by the utility companies when they commit sufficient power-generating capacity to meet the entire demands of the treatment system. Peak power use for as little as 15 minutes may establish a demand charge for up to 12 months. Demand charges can be reduced in some instances by providing power-generating capability at the treatment plant. The recovery and use of digester gas for meeting energy needs and reducing demand is one example of how both user charges and demand charges can be reduced with resulting cost savings to the treatment plant (see Fig. 4-2). Digester gas use is discussed in more detail in Chap. 12. As part of an energy cost evaluation, a sensitivity analysis should be considered to assess the impacts of future changes in energy costs on the overall cost of operation for the treatment facilities.

4-5 IMPLEMENTATION OF WASTEWATER MANAGEMENT PROGRAMS

A program for the implementation of a wastewater treatment project has several major steps, usually consisting of (1) facilities planning, (2) design, (3) value engineering, (4) construction, and (5) startup and operation. Most major projects having a construction cost over $10 million follow all steps. Smaller projects (less than $10 million) may not include the value-engineering step, although some simplified form of value engineering is highly desirable.

Facilities Planning

A facilities plan is a document established to analyze systematically the technical, economic, environmental, and financial factors necessary to select a cost-effective wastewater management plan. The facilities plan itself may include an environmental impact assessment; on major projects, the environmental assessment is usually a separate document. The scope of the facilities plan includes (1) defining the problem; (2) identifying design year needs (usually at least 20 years); (3) defining, developing and analyzing alternative treatment and disposal systems; (4) selecting a plan; and (5) outlining an implementation plan including financial arrangements and a schedule for

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hazards to personnel. The construction contract must define clearly how these issues are addressed.

In selecting materials of construction, three principles are fundamental to the engineering design of process oriented facilities: (1) durability—the life of the equipment is expected to last at least 20 years and structures, 30 to 40 years; (2) good quality materials and equipment to minimize maintenance and replacement; and (3) environmental suitability, realizing that wastewater and its attendant chemicals are corrosive. For these reasons, most process structures are constructed of reinforced concrete and other materials of construction are selected based upon their corrosion-resistant properties. For information about materials of construction for wastewater treatment plants, Ref. 23 may be consulted.

Construction and Program Management. Management techniques used to ensure timely construction of the project in accordance with the plans and specifications include construction management and program management. Construction management usually provides for review of the contract plans and specifications and a management overseeing of the construction contractor's operations. The purposes of construction management are to (1) verify the technical adequacy, operability, and constructability of the plans and specifications before construction begins; (2) establish construction schedules consistent with the program objectives and to optimize cash resources; (3) review the contractor's operation to ensure conformance with the plans and specifications; and (4) control change orders and possible construction claims. Program management differs from construction management in that it provides a single source of responsibility and authority (accountable to the owner) for the management, planning, engineering, permitting, financing, construction, and startup operations of the total wastewater management program. Program management is often used in very large projects or projects that are privatized (see Sec. 4-6).

Startup and Operations

Some of the principal concerns in wastewater engineering relate to the startup, operation, and maintenance of treatment plants. The challenges facing the design engineer and the treatment plant operator include the following: (1) providing, operating, and maintaining a treatment plant that consistently meets its performance requirements; (2) managing operation and maintenance costs within the required performance levels; (3) maintaining equipment to ensure proper operation and service; and (4) training operating personnel. Therefore, the design has to be done with the operations in mind, and the plant has to be operated in accordance with the design concept. One of the principal tools used for plant startup, operation, and maintenance is the operations and maintenance (O&M) manual. The purpose of an O&M manual is to provide treatment system personnel with the proper understanding of recommended operating techniques and procedures, and the references necessary to efficiently operate and maintain their facilities. The design engineer usually has the lead responsibility in

Source: Wastewater Engineering, Treatment Disposal and Reuse, Third edition, Metcalf & Eddy, INC.

INTERSTATE UTILITY SALES, INC.
6831-B FAIRVIEW ROAD • CHARLOTTE, NC • 28210
TELEPHONE (704) 367-1970 • FAX (704) 367-1690

January 19, 2005

Mr. Ken Parnell
HPG
1436 Sunset Blvd
West Columbia, SC 29106

Re: Plant Life

Mr. Parnell:

Your question regarding the expected life of a plant involves two factors: continually changing regulation and equipment wear.

Regulation

Plants are affected by changes in regulation to the point that a small plant may be obsolete long before the plant wears out. Increasingly tighter effluent regulations will require changes in processes and/or addition to the processes to accomplish previously unidentified permit requirements. In the Charleston area, a recent regulatory requirement for permitting based on the Ultimate Oxygen Demand was fought in court to stop implementation. If the new regulation comes into force, all major plants affecting the Charleston Harbor will require major improvements to limit nutrient discharges. Current nutrient limits are expected to change in the next five years including a tighter limit on nitrogen and phosphorous based on similar actions taken in other states.

Plant Wear

Plants wear due to the harsh environment and constant duty service. Internals in plants will require replacement. Manufacturers suggest a typical twenty year life is the best estimate of plant life expectancy. Some internal components such as polymer based diffusers have a life expectancy of 5-7 years before major replacement. Submersible pumps used in plants have a life expectancy of five to seven years. While the steel or concrete structure may last longer than twenty years if properly maintained, the internals of a plant will require replacement before twenty years.

Industry Standard Life Cycle Cost Analysis and Financing

When a life cycle analysis for a plant is required in the bid document to verify the true cost of a plant, the analysis is based on a twenty year life. The life span is required in bid documents prepared by the nation's largest engineering firms and utilities in the country. The Dorchester County WWTP Upgrade Evaluation was completed on a twenty year basis for cost analysis. When plants are financed, typically a twenty year term is used as the basis for financing since it is the industry standard and the borrowers do not feel comfortable extending the term past twenty years.

In summary, the industry standard life for a wastewater treatment plant is twenty years.

Please call with questions or comments.

Sincerely,

Jim Stanton

Jim Stanton
Interstate Utility Sales, Inc.

Combs & Associates, Inc.

Post Office Box 32185 • Charlotte, North Carolina 28232-2185
(704) 374-0450 • Fax (704) 375-6618
tonycombs@combs-associates.com

January 19, 2005

HPG, Consulting Engineers
Attention: Mr. Ken Parnell
1432 Sunset Blvd.
West Columbia, SC 29169
Telephone 803-739-2888
Telefax 803-739-2277

Re: Bush River Wastewater Treatment Plant
Equipment Design Life Analysis

Dear Mr. Parnell:

We represent the wastewater treatment plant equipment that you have drawn and specified for the Bush River Wastewater Treatment Plant. I would like to confirm that a twenty-year design life is our industry standard for this equipment. Consideration of a design life of over twenty years for this equipment is unreasonable.

I earned a Bachelor of Science and a Master Degree in Civil Engineering from North Carolina State University. I am a Registered Professional Engineer in North Carolina. I have been involved in water and wastewater equipment design and sales in the Carolinas constantly since 1976. My company's water and wastewater treatment equipment sales vary from ten to twenty million dollars per year.

Cost effective evaluations of equipment designs using this type of wastewater treatment equipment use a twenty-year design life. Present worth analysis using this type of wastewater treatment equipment along with its power consumption and maintenance cost use ten to twenty year life.

I work with numerous water and wastewater consulting engineering firms in the Carolinas who constantly analyze equipment in their selection of products for water and wastewater treatment plants. I have never been involved in a cost analysis that used over twenty years for the design life of wastewater treatment plant equipment.

Please contact me if I can be of further assistance.

Sincerely,

Anthony R. Combs, PE
President
Combs & Associates, Inc.

EXHIBIT 14

To purchase, select a quantity and click "Add to My Shopping Basket" Please select a Store Location

Public Utility Depreciation Practices (August 1996)

Non Member Price:	**$72.00**	Quantity: 1	Add to My Shopping Basket
Member Price:	$72.00		

Item Description:
The purpose of this manual is to present background material and operating practices for the determination of depreciation of public utility property for regulatory purposes. The information contained in the manual was compiled by the NARUC's Staff Subcommittee on Depreciation with the intended purpose of presenting current practices and methods of determining depreciation and to update the previous edition. The publication begins with a discussion of the history of depreciation noting significant court decisions, regulatory statutes and practices regarding depreciation. It also includes background material sufficient for an understanding of depreciation practices. The manual also describes early depreciation methodologies and jurisdiction over depreciation practices. The remainder of the manual describes in great detail the many variables to be considered in determining depreciation including current concepts of depreciation, accounting for plant assets, general depreciation accounting, computing depreciation, mortality concepts, turnover and simulation analyses, actuarial life analyses, the "generation arrangement", the life span method, estimating salvage and cost of removal, equal life group depreciation rates, theoretical reserve studies, and the effects of expensing on a utility's performance. 345 pages

Includes 20% Shipping Cost

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